Amendments to the Claims:

1-20.(Cancelled)

21. (Currently Amended) A method for providing a common coordinate basis between two optical wireless units wherein information is transmitted between the optical wireless units via light beams, the method comprising:

        at the first optical wireless unit:

                moving the light beam in a first prespecified pattern;

                receiving detector range data from the second optical wireless unit; and

                moving the light beam in a second prespecified pattern;

        at the second optical wireless unit:

                determining detector range;

                transmitting the detector range;

                determining reference positions; [[and]]

                generating a table of detector readings[[.]] ;and wherein the first prespecified pattern is a spiral pattern with a specified number of revolutions, first determining step comprising:

        calculating a signal strength metric for each revolution;

        maintaining a maximum signal strength;

        comparing the signal strength metric with a threshold;

        setting a radius of dynamic range if the signal strength metric is less than the threshold; and

        transmitting the radius to the first optical wireless unit.

22. (Cancelled)

23. (Original) The method of claim 22, wherein the second optical wireless unit senses the light beam with its optical detectors a plurality of times per revolution of the light beam, the signal strength metric is expressed as:

$$signalStrength = \sum_{\substack{positional \\ data}} \left(NE^2 + SE^2 + SW^2 + NW^2\right)$$

where: NE, SE, SW, and NW are data provided by the optical detectors and the summation is over all measured positional data points in a single revolution.

24. (Original) The method of claim 22, wherein the threshold is a small fraction of the maximum signal strength.

25. (Original) The method of claim 24, wherein the threshold is 12.5 percent of the maximum signal strength.

26. (Original) The method of claim 22, wherein the radius of dynamic range is the revolution whose signal strength is less than the threshold.

27. (Original) The method of claim 22, wherein the radius of dynamic range is the final revolution of the spiral if the signal strength of all the revolutions are greater than the threshold.

28. (Currently Amended) The method of claim 21, wherein the second prespecified ~~pattern is~~ pattern is scaled according to the received detector range data.

29. (Original) The method of claim 21, wherein the light beam pauses at each reference position as it follows the second prespecified pattern, the generating step comprising:
    polling the optical detectors for data as the light beam pauses; and
    saving the polled data.

30. (Original) The method of claim 29, wherein the second optical wireless unit polls the optical detectors for data a plurality of times as the light beam pauses and computes an average of the data.

31. (Original) The method of claim 29, wherein the generating step further comprising:

    linearizing the data in the table; and

    creating a second table with the linearized data.

32. (Currently Amended) <u>A method for providing a common coordinate basis between two optical wireless units wherein information is transmitted between the optical wireless units via light beams, the method comprising:</u>

    <u>at the first optical wireless unit:</u>

        <u>moving the light beam in a first prespecified pattern;</u>

        <u>receiving detector range data from the second optical wireless unit; and</u>

        <u>moving the light beam in a second prespecified pattern;</u>

    <u>at the second optical wireless unit:</u>

        <u>determining detector range;</u>

        <u>transmitting the detector range;</u>

        <u>determining reference positions;</u>

        <u>generating a table of detector readings and,</u> ~~The method of claim 21,~~

wherein the method further ~~comprising:~~ <u>comprises</u>

    selecting a position from the table based on an optical detector reading; and

    transmitting the position to the first optical wireless unit after generating the table

of optical detector readings.

33. (Original) The method of claim 32, wherein the selecting step comprising:

    polling the optical detectors for an optical detector reading;

    generating a set of table indices; and

    selecting a position using the set of table indices.

34. (Original) The method of claim 33, wherein the optical detector reading is determined from data provided by the plurality of optical detectors and is expressed as:

$$remote_x = NE + SE - SW - NW$$
$$remote_y = NE - SE - SW + NW$$

where: $remote_x$ and $remote_y$ are the optical detector readings, and NE, SE, SW, and

NW are data from the optical detectors.

35. (Original) The method of claim 34, wherein the set of table indices are generated from the optical detector reading and is expressed as:

$$tentry_x = trunc(s_{x1} remote_x + remote_{x\min})$$
$$tentry_y = trunc(s_{y1} remote_y + remote_{y\min})$$

where: $s_{x1} = \dfrac{NumTableEntries}{remote_{x\max} + remote_{x\min}}$ $s_{y1} = \dfrac{NumTableEntries}{remote_{y\max} + remote_{y\min}}$,

NumTableEntries is a number of entries in the table, $remote_{x\max}$, $remote_{x\min}$, $remote_{y\max}$, and $remote_{y\min}$ are maximum and minimum values along columns and rows of the table, and the trunc() operator truncates a numerical value to a specified number of decimal places.

36. (Original) The method of claim 35, wherein the position is stored in the table and is selected via the expressions:

$$x_{cmd} = (table_x(tentry_x + 1) - table_x(tentry_x)) *$$
$$(remote_x S_{x1} - tentry_x) + table_x(tentry_x)$$
$$y_{cmd} = (table_y(tentry_y + 1) - table_y(tentry_x)) *$$
$$(remote_y S_{y1} - tentry_y) + table_y(tentry_y)$$

where: $table_x()$ and $table_y()$ are functions returning x and y entries from the table.

37-47. (Cancelled)